Telephony

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MAN IN THE ITU

HOT SEAT Pekka Tarjanne sees profound changes and hectic times ahead for the ITU

PUERTO RICO TOO TOUGH FOR HUGO

Most local service survives as Hurricane Hugo devastates island

NEW RATE PLAN TO THE RESCUE?

New York Tel seeks price caps to augment incentive regulation

MONDAY, SEPT. 25, 1989 Volume 217, No. 14

Telephony

INTEGRATING VOICE & DATA COMMUNICATIONS

For someone stepping into one of the hottest seats in the telecommunications world, Pekka Tarjanne is taking on the mantle of ITU secretary general and the profound industry changes that come with it quite calmly. Cover photo by Jaakko Savolainen

DEPARTMENTS

94 ADVERTISERS' INDEX

6 IN MY OPINION

32 MEETINGS

66 MERITS AND MILESTONES

96 MOVING AROUND INDUSTRY

68 NEW PRODUCTS AND SERVICES

NEWS OF THE WEEK

8 **PUERTO RICO TOO TOUGH FOR HUGO**
Dial tone continues for 93% of Puerto Rico Telephone's customers in the wake of Hurricane Hugo

9 **NEW YORK TEL PRICE-CAP PLAN DRAWS PRAISE**
Some observers believe the telco's latest plan for regulatory reform and price increases will help it recover from the rate moratorium imposed in 1987

9 **BELLCORE, SWB PLAY TELEPHONE HI-FI**
Southwestern Bell Telephone demonstrates its latest breakthroughs on 7-kHz audio-data technology at a Bellcore industry forum

10 **US SPRINT LANDS TWO BIG CONTRACTS**
The long-distance carrier unveils its FTS 2000 center and announces major deals with both PepsiCo and the FBI

FEATURES

33 **NOT JUST THE FAX**
By John Williamson. Even though facsimile is booming in Europe, many carriers refuse to release their grip on the remaining telex market

38 **WILL THE FAX BOOM GO BUST?**
By Laura O'Brien. Some technologies, like fads, come and go. Is the newest craze for facsimile machines destined to slip from memory, just as the hula hoop slipped from baby boomers' waists?

48 **MAN IN THE ITU HOT SEAT**
By John Williamson. Former physicist and Finnish politician, Pekka Tarjanne calmly views the profound changes, and probable hectic times, ahead for the UN agency he soon will lead

59 **VIDEOTEX ENTERS ANOTHER DIMENSION**
By Jean-Pierre Temime. ISDN has catapulted France Telecom's Teletel videotex system into a brave new world, where a whole range of services is possible

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In My Opinion

What sort of Christmas present is PCN?

There has been no shortage of candidates to pick up the $3.5-billion tab for building a personal communications network in the U.K. By the time the Sept. 14 deadline passed, 18 major international league players grouped into five consortia had thrown their hats into the ring, hoping to pick up an operating license.

Two—and possibly three—license winners should be announced by the end of the year. The question is: Will a PCN license turn out to be much of a Christmas present?

PCN is space-age stuff. It adds a domestic dimension to cellular telephony. It is at once cheaper, more user-friendly and of much higher capacity than cellular. If it's not exactly an all-weather, anytime, go-everywhere citizen-specific communications media, its advocates say that it is most of the above.

As with all space-age stuff, though, there are disbelievers. In this case the skeptics maintain that current technology cannot handle all that is being promised by PCN promoters and that this U.K. initiative is likely to incur the wrath of international standards-making bodies. There's also a feeling in some quarters that there isn't a good commercial case for another mobile system, following as it will in the footsteps of cellular and cordless pay phone services.

On the technology front it is undeniable that there are still some gaps to fill and refinements to be made. Experience indicates, though, that technical solutions can be found quickly if a new, untapped mass market is perceived to exist.

As far as standards are concerned, the U.K. has attempted to forestall international criticism by requiring PCN to be based either on the Pan-European GSM digital cellular standard or the emerging digital European cordless telephone specification. It is more likely that PCN will use the Pan-European standard because it can be made rapidly available once intellectual property rights issues are sorted out.

Premature use of DECT, on the other hand, would probably antagonize its European sponsors. Continental European interests may not applaud the U.K.'s attempts to hog the mobile spotlight, but they have no substantial standards beef in the case of PCN.

What is left is the commercial logic of PCN, on which the requisite technology advances also may depend.

I presume that intensive market research has been carried out before manufacturers and operators of global repute would commit themselves to the tremendous investments necessary to implement PCN. What this research reveals is that people will pay for cordless capability. The trick will be to pitch the cost of PCN ownership over time at the appropriate level.

If all goes well, the Department of Trade and Industry, when handing out the licenses, could well play Santa.

John Wilson

Telephony

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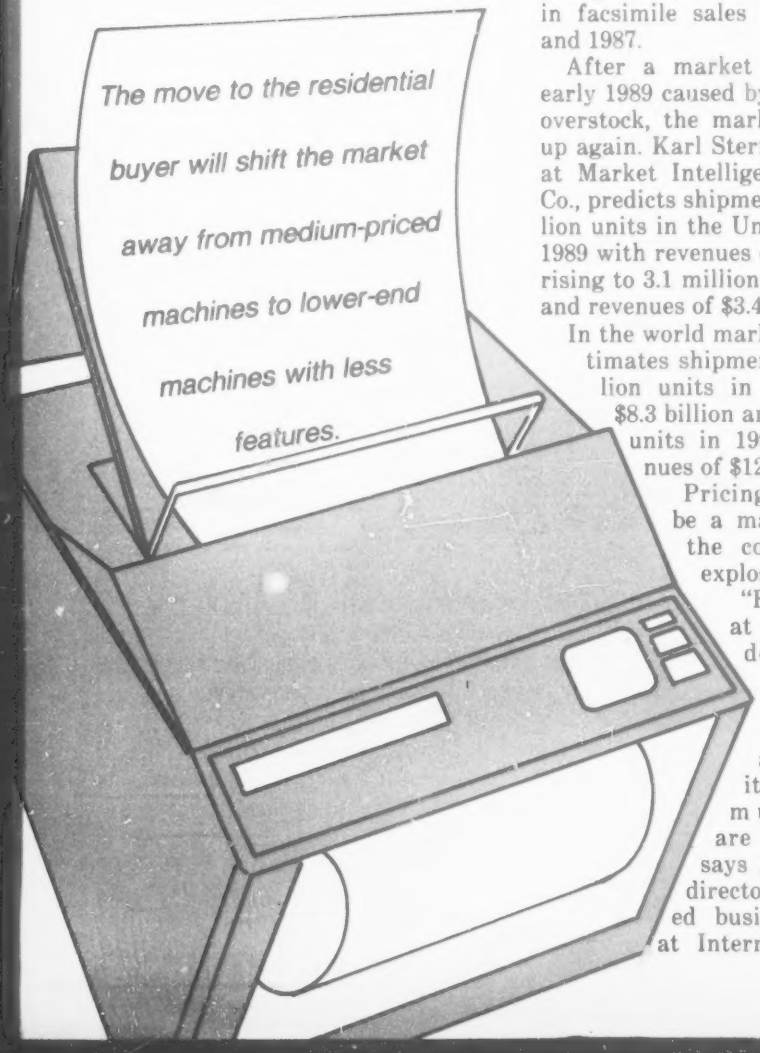
INTERTEC

Will the fax boom go bust?

Although it is not as lucrative a market now as it was in the mid-1980s, the fax field will remain fertile in the near future

LAURA O'BRIEN
Associate Editor


The move to the residential buyer will shift the market away from medium-priced machines to lower-end machines with less features.

Technologies, like fads, come and go. Is the newest craze for facsimile machines destined to whirl away in a cloud of telecommunications memories, just as the hula hoop slipped from our waists?

Past sales and projections into the 1990s indicate fax fever will stay awhile, although the market will change substantially and produce diminishing revenues compared to the mid-1980s fax epidemic.

That boom was fueled by the introduction in 1985 of lower-priced Japanese-produced Group III standard machines to the United States. The explosion brought an 89.7% revenue growth in facsimile sales between 1986 and 1987.

After a market slowdown in early 1989 caused by fax machine overstock, the market is picking up again. Karl Sterne, an analyst at Market Intelligence Research Co., predicts shipments of 1.3 million units in the United States in 1989 with revenues of $2.1 billion, rising to 3.1 million units by 1995 and revenues of $3.4 billion.

In the world market, Sterne estimates shipments of 6.3 million units in 1989 earning $8.3 billion and 10.4 million units in 1995 with revenues of $12 billion.

Pricing appears to be a major factor in the continuing fax explosion.

"Fax is priced at a point that doesn't mean a big investment, and the return and capabilities for communication are very large," says Ann Palermo, director of integrated business systems at International Data Corp. "Fax is also easy to use. There are people using fax who don't know how to use a personal computer."

"The sheer practicality of print communication is the No. 1 thing," says Toshiba spokesman John Lesser. "And when you combine that with ease of use, you have a beautiful product."

Sharp Leads the Pack

Leading the fax market is Sharp with a 20% market share and shipments of 240,000 fax machines in 1988. Following are Ricoh, Canon and Murata.

None of these manufacturers expect the boom of the 1980s to last into the next decade. All will see sharp reductions in revenue growth after 1989, compared to the period between 1986 and 1988 during which revenue growth averaged 39%, say the analysts. Decreasing prices—not fewer sales—are to blame, Sterne says.

"Overall, the market is growing at a healthy rate. But there won't be the same frenzy in the market," says Sterne, who recently helped compile MIRC's study, "U.S. and World Facsimile Markets."

Continued market growth will come from lower fax machine prices, new market distribution and new customers. More small businesses will buy fax machines as prices drop below $3000. And residential users won't jump on the fax bandwagon until prices dip under $500, analysts predict.

"The residential market will be new but it will not grow rapidly. It will grow at a more controlled pace. In the office, a fax is a requirement, but that is not the case at home. You don't have to have a fax. A purchase is dictated less by need than by desire," Sterne says.

Link Resources' recent national work-at-home survey shows that there are 2.2 million at-home workers who rely on modems. Of

continued on page 42

these, 500,000 households report using fax devices.

As many as 500,000 more fax machines will be bought for at-home use within the next year, which means that about 33% of total fax machines are sold to home offices, says Carol D'Agostino, a Link analyst.

New markets will blossom in public places with the largest growth in airports and hotels where people will be able to use credit cards to fax messages. Easily accessible public fax machines will eventually put fax service stores out of business, [MIRC's] Sterne says.

Courting the Home User

The move to the residential buyer will shift the market away from medium-priced machines to lower-end machines with less features. Manufacturers say consumers will initially want machines that only have paper cutters and auto-feeding of multiple originals, but they will eventually desire machines that provide half-tone, automatic dialing and combination telephone-fax features.

Ricoh reports tremendous interest from small businesses, but little from residential users.

"People are finding that, if they want to do business, they need a fax machine. As people get machines, they wonder how they got along without them. After a while, you will see them upgrade their machines," says Garry Waddell, manager of product planning-document fax, at Ricoh.

Z. Gary Miller, product market manager for fax at Xerox, says upgrading should be expected because "the market has changed from a centralized market to a small machine market because of popularity and price. As the [small market] fills up, the [mid- and large-sized] markets will grow as people who bought the small machines wish they hadn't."

New markets will blossom in public places with the largest growth expected to occur in airports and hotels where people will be able to use credit cards to fax messages. Easily accessible public fax machines will eventually put fax service stores out of business, Sterne says.

These new markets are changing the distribution process for fax machines. Instead of buying through interconnect companies or other customer premises equipment operations, users will increasingly buy fax machines from the same retail outlets that now sell everything from telephones to toaster ovens.

"Sharp's edict is to go retail. People are buying fax machines today for small business and home offices pretty much the way they buy consumer products like VCRs," says Dennis McLaughlin, Sharp's national sales manager, personal home office division. "Salespeople aren't able to call on these people, yet they need machines," he said.

The Facts on Fax

As the fax market evolves, so will the role of the fax machine, analysts and manufacturers agree.

"As more and more higher featured fax products are offered at lower prices, fax is switching from a telecommunications office systems product to a lower-end business product," Toshiba's Lesser says.

IDC's Palermo agrees. "I see a movement away from the fax in its traditional role—one fax in a central location—to automation of the fax and integration on a local area network or attachment to a host system," she says.

New innovations and pricing will dictate how smoothly fax machines move into new environments. Manufacturers estimate that continually changing technology and continually lower prices make current fax machines outdated within nine months.

Analyst Sterne is expecting the Group III fax market to stagnate, crippled by standards that limit technical improvement. "Nothing exciting will happen technologi-

continued on page 46

TABLE 1 FAX MACHINE MARKET: UNIT SHIPMENT AND REVENUE FORECASTS (U.S.), 1985-1995
(In thousands of units and millions of dollars)

Year	Unit shipments (000)	Revenues (millions)	Revenue growth rate (%)
1985	157.8	575.2	—
1987	454.0	1177.9	89.7
1989	1366.8	2115.5	22.6
1991	2138.1	2643.9	10.6
1993	2707.4	3022.8	6.9
1995	3156.2	3387.0	5.8

Compound Annual Growth Rate, 1985-1995: 44.1%

Note: All figures are rounded.
Source: Market Intelligence Research Company

cally with Group III except the prices will go down and the reliability will go up."

But manufacturers are trying to be innovative and match customer requests. Karen Adelman, AT&T's fax product marketing manager, says customers are requesting machines that are easy to use and equipped with answering machines, telephones, memory and mailbox protection. Customers also want networking capability, automatic document feeders, auto-dialing, paper cutters, operator display, half-tone and confirmation of report.

Manufacturers would like to offer inexpensive plain paper machines and are working toward that goal. Currently, most Group III machines use thermal paper, which is messy and nonpermanent. The plain paper innovation would "revolutionize" the Group III standard and breathe new life into it, says Ricoh's Waddell. Plain paper machines are available now, but they cost about $3500.

"The worst thing today about Group III is the sleazy thermal paper. More faxes will become plain paper and, as that happens, the price will come down," says MIRC's Sterne.

An alternative or addition to Group III is the fax board. A fax board permits users to automatically send personal computer output as fax documents to Group III machines on public telephone lines, eliminating the need for a separate fax machine in an office. Fax boards produce a higher quality copy than a fax machine and are effective for mass producing documents.

The market share is small for fax boards because users need a personal computer and they must be computer literate, says Sterne, who doesn't think fax boards are as cost-effective as facsimile machines.

In 1988, 41,000 boards were shipped, bringing in $23 million in revenues. In 1989, projected shipments will reach 88,000 boards with $41 million in revenues, according to MIRC's study.

Group IV fax machines will provide the technical advancements people will be looking for by 1995, Sterne predicts. Group IV is completely digital with very high-speed and resolution. Documents that take several minutes on a Group III fax are transmitted in a matter of seconds on a Group IV machine.

Top 1988 Group III facsimile vendors

Sharp
Murata
Ricoh
Canon
Panafax
Pitney Bowes
Toshiba
Fujitsu
Harris/3M
Xerox

Names supplied by Market Intelligence Research Co.

'The worst thing today about Group III is the sleazy thermal paper. More faxes will become plain paper and, as that happens, the price will come down,' says MIRC's Sterne.

But Group IV is also high priced and incompatible with today's analog telephone network. Even by 1995, less than 10% of the units sold will be Group IV machines. But those sales will account for more than 10% of the money spent on faxes, Sterne says.

Manufacturers and vendors are hesitant to jump into wide-scale production of Group IV machines because of limited market appeal. The top four vendors that commercially offer Group IV machines in the United States are Ricoh, NEC, Fujitsu and Canon. On the other hand, AT&T and Toshiba have no Group IV machines available. Sharp manufactures the machines, but does not offer them commercially. And Xerox offers the machines only in Japan.

"The key that will drive Group IV is the new digital phone systems and that means the integrated services digital network. Without ISDN, it is not cost-effective to have Group IV unless you're a high-volume fax company," says Joe Cosgrove, Sharp's national marketing manager. In fact, some telecom analysts think Group IV fax demand could help drive up ISDN demand.

There's a Catch

Along with fax popularity has come the unwanted "junk fax"—the unsolicited advertisements and promotional materials that companies send out to a captive fax audience. Most disturbing to businesses is the fact that junk fax transmission ties up their machines and uses up their paper.

The outcry has been loud enough to stimulate action at both the federal and state level. Twenty states have acted on laws to restrict junk fax transmission.

The House telecommunications subcommittee designed a bill, now before the Energy and Commerce Committee for further action, to let consumers use a clearinghouse function to tell telephone companies they don't want junk fax or auto-dial calls.

The bill would restrict unsolicited fax messages, calls to cellular phone customers and calls made by auto-dialers. The Federal Communications Commission would implement rules and penalties, as well as maintain a list of customers who do not want unsolicited calls.

The legislation doesn't bother fax vendors. "I don't think much of those laws. The problem is junk fax is not as big as the hype the lawmakers make," says Cosgrove.

With the fax craze heating up legislators and Group IV machines on the horizon, fax machines won't join dusty hula hoops in the closet any time soon. ■